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Journal of the Society of Arts.

FRIDAY, SEPTEMBER 3, 1869.

Announcements by the Council.

IMPROVED CABS.

The Council of the Society of Arts offer the following medals for improved hackney carriages specially suited to the metropolis :—

- The Society's Gold Medal for the best and most convenient open hackney carriage for two persons.
- The Society's Silver Medal for the second-best ditto.
- The Society's Gold Medal for the best and most convenient closed hackney carriage for two persons.
- The Society's Silver Medal for the second-best ditto.
- The Society's Gold Medal for the best and most convenient hackney carriage for four persons, either open or closed, or both.
- The Society's Silver Medal for the second-best ditto.

Lightness of construction, combined with adequate strength and durability, will be especially considered in making the awards.

The awards will be made after actual trials of the carriages extending over a certain period.

Communications describing the carriages must be sent to the Secretary of the Society of Arts

before the 1st January, 1870, the carriages to be sent to a place hereafter to be appointed.

The Council also offer the Society's Silver Medal for the best instrument, to be affixed to a cab or other hackney carriage, for indicating the fare as between the passenger and the driver, whether by registering the distance travelled or otherwise, and which instrument shall also indicate, for the convenience of the cab-owner and of the driver, the total distance travelled during the day and the total amount earned. The instruments competing, with full descriptions of their construction, to be sent to the Society's House before the 1st January, 1870.

Competitors may, at their option, sign their communications, or may forward with them sealed letters containing the name and address of the writer.

The Council reserve to themselves the right of withholding all or any of the medals, in case none of the carriages or instruments possess, in their opinion, sufficient merit.

In the trials of the several carriages, the small amount of vibration and noise will be duly considered by the judges.

SUBSCRIPTIONS.

The Midsummer subscriptions are due, and should be forwarded by cheque or Post-office order, crossed "Coutts and Co.," and made payable to Mr. Samuel Thomas Davenport, Financial Officer.

PROGRAMME OF EXAMINATIONS FOR 1870.

The Council have decided to remove from the Programme those subjects in which the Science and Art Department holds examinations, which, it appears, are now largely taken advantage of by the same class of persons (and very often by the same individuals) as those who sit at the Society's examinations. The following subjects, therefore, do not appear in the programme for 1870 :—

Algebra.	Navigation, &c.	Light and Heat.	Animal Physiology.
Geometry.	Principles of Mechanics.	Chemistry.	Free-hand Drawing.
Trigonometry.	Practical Mechanics.	Mining and Metallurgy.	Practical Geometry.
Conic Sections.	Magnetism and Electricity.	Botany.	Mechanical Drawing.

PRELIMINARY NOTICE.

I. These Examinations have been established for the benefit of the members and students of Institutions in Union with the Society of Arts, who are commonly mechanics, artisans, soldiers, labourers, clerks, tradesmen and farmers in a small way of business, apprentices, sons and daughters of tradesmen and farmers, assistants in shops, and others of various occupations. To all such members and students in the Institutions, and to other persons of the like condition, male and female, the Examinations, certificates, and prizes, described in this programme, are open on the general conditions stated herein. Persons, however, who are, or have been, professional teachers or pupil-teachers; persons who either are enjoying or have enjoyed a liberal education, or who occupy a higher position in society than those above described, may obtain certificates, but cannot compete

for the prizes, of which particulars are given on pages 798 *et seq.*

II. The certificates are not competed for. They are awarded as records of positive, not comparative, attainment. The prizes are competed for.

III. For the conditions on which persons of a higher grade in society may be examined and receive certificates, but not compete for prizes, see paragraph 4 (D).

IV. The Candidates for Examination have not to go to a distance from their homes. The Examinations are held in all places in the United Kingdom where a Local Educational Board connected with the Society of Arts is willing to make the requisite arrangements.

V. For a list of the Local Boards already formed, see page 800.

VI. For instructions as to the formation of Local Boards and their duties, see page 793.

The EXAMINATIONS are—

- (1.) The Previous Examination by District Unions and Local Boards for ascertaining the fitness of Candidates to present themselves at the Final Examination.
- (2.) The Final Examination by the Society of Arts' Board of Examiners, under the supervision of the Local Boards.

PREVIOUS EXAMINATIONS BY DISTRICT UNIONS AND LOCAL BOARDS.

1. The object of these examinations is to "sift" the Candidates for the Final Examinations, so as to keep back (1) those who are not fairly grounded in the elements of education—spelling, writing, and arithmetic—and (2) those who are not fairly acquainted with the subject or subjects in which they desire to be examined by the Society of Arts, and are therefore unlikely to succeed in that examination. The sifting in the above-named elementary subjects may be effected at the discretion of the Local Boards; they should examine their Candidates in spelling and writing by dictating to them a passage from an English author for them to write down; in arithmetic by setting them moderately easy questions to work out in the usual manner. The best mode of sifting the Candidates in the special subjects in which they desire to be examined by the Society of Arts is for the Local Boards to examine them therein by means of printed (or written) questions and written answers; but, where a Local Board finds itself without the means of conveniently holding such an Examination in any special subject, such Board may satisfy itself in any other mode, and state simply that it has satisfied itself that the Candidate is fit to be examined by the Central Board in that subject.

2. The previous Examinations must be held sufficiently early in the year to enable the proper returns to be made, as explained in par. 6.

FINAL EXAMINATION BY THE SOCIETY OF ARTS.

3. No candidate can be admitted to the Final Examination unless duly returned by a District Union or Local Board as having passed a Previous Examination.

4. Every admitted Candidate must be at least 16 years of age.

(A.) Members of, or students of classes in, Institutions in Union with the Society of Arts, are examined Free.

(B.) Members of, or students of classes in, Small Institutions,* not in Union with the Society of Arts, but subscribing one guinea a year for admission to the Examinations alone, are examined Free.

(C.) Members of, or students of classes in, "Small Institutions"* not in Union with the Society of Arts, but connected with it through a District Union or Local Board, are examined on payment of a fee of 2s. 6d.

N.B.—It will be understood that Candidates coming under the heads (A), (B), or (C) must not be of a higher class in society than those described in par. 1. of the Preliminary Notice.

(D.) Persons of a higher class of society than those described in paragraph I. (Preliminary Notice), cannot compete for prizes, but may be examined for certificates on payment of a fee of 5s.

* Small Institutions are defined as those which have an income of less than £75 a year.

5. The Council in every case require the Local Boards to certify whether a Candidate should pay this higher fee; and it is earnestly hoped that in any instance where a Local Board has reason to believe that a Candidate is or has been a teacher, or that he or his parents occupy such a position in society or are in such easy pecuniary circumstances as to disqualify him, according to the regulations, for competing for a prize, they will at once, in case of certainty, return him as not competing for a prize, or in case of doubt, communicate with the Secretary of the Society of Arts.

6. A Copy of Form No. 2 will be forwarded to the Secretary of each Local Board, and must be filled up and returned to the Secretary of the Society of Arts before the 18th of March. The requisite number of forms No. 4 will then be forwarded, and these, when filled up, must be returned not later than the 3rd of April. Each of these forms, when returned, will be numbered at the office of the Society of Arts, and a card for each candidate, with his name and his number, will afterwards be forwarded to the Secretary of the Local Board for distribution, together with copies of the time-table.

7. The printed papers of questions in the various subjects will be afterwards forwarded to the Secretary of the Local Board; details as to the mode in which the Final Examination is to be conducted are contained in the Letter of Instructions (Form No. 6), and members of the Local Boards should make themselves thoroughly acquainted with them.

8. When the Candidates' papers have been submitted to the judgment of the Society's Examiners, certificates of three grades will be awarded, and the names of the Candidates who obtain prizes and certificates will be afterwards published in the *Journal of the Society of Arts*.

9. A Candidate who has obtained from the Society a certificate of the 1st class in any subject cannot again be examined in the same subject; but a Candidate who has obtained a certificate of the 2nd or 3rd class may, on the recommendation of the Local Board, be examined in the same subject, in a subsequent year, without again passing the Previous Examination.

10. A Candidate who, having obtained a certificate in any subject, desires to be examined in some other subject, in a subsequent year, may be "passed" by the Local Board, after an examination in that subject, without re-examination in the elementary subjects; but, in all cases, the name must be returned in the proper form (No. 4).

11. Particulars of the subjects for the Final Examination are given below.

12. The Time-table has been drawn up to meet the general convenience of the Candidates; and no variation of it can possibly be allowed, so that, in choosing the subjects in which they desire to be examined, Candidates must take notice of the arrangements of this Time-table, as they cannot be examined in two subjects which are set down for the same evening. The days and hours of Examination must be strictly adhered to.

13. The Examiners will reject all ill-written, ill-spelt, ill-composed, or ungrammatical papers that may be laid before them.

TIME-TABLE FOR 1870.

TUESDAY, 26th April, From 7 to 10 p.m.	WEDNESDAY, 27th April, From 7 to 10 p.m.	THURSDAY, 28th April, From 7 to 10 p.m.	FRIDAY, 29th April, From 7 to 10 p.m.
Arithmetic. Logic & Mental Science. German. Floriculture. Musical Compo- sition. (Tonic Sol-fa.)	Book-keeping. Theory of Music. Domestic Eco- nomy. English History. Italian.	Metric System. Mensuration. Political Econ- omy & Civil Government. French. English Lan- guage & Lite- rature.	Geography. Latin. Spanish. Fruit and Vege- table Culture.

FRIDAY, April 29th 6 to 7 p.m.—Dictation (see page 800.)

LOCAL EDUCATIONAL BOARDS.

14. Local Boards may be formed wherever the managers of Institutions, or other persons, may be prepared to co-operate with the Society of Arts.

15. Each Local Board must consist of at least three members, and must have a Chairman and a Secretary. The district for which the Board is to act should be defined, and the composition of the Board must be such as to command the respect and confidence of the neighbourhood. No member or officer of a Local Board can be admitted to examination.

16. The duties of Local Boards may be defined as follows:—

(A.) To give publicity to the system of Examinations by the circulation of the programmes, hand-bills, &c. (copies of these will be furnished *gratis* on application), and to give encouragement and advice to those young persons who are likely to become candidates.

(B.) To hold the Previous Examinations.

(C.) To superintend the Final Examinations.

17. Local Boards make no payment to the Society, unless they exercise the power of admitting Candidates who are not members of any Institution in Union with the Society of Arts (see par. 4 C.); in which case a subscription of one guinea a year must be paid.

18. A detailed list of each Local Board (giving the exact address of the Secretary) should be submitted to the Council of the Society of Arts before the 1st of February, 1870, when the general list of such Boards will be published; and where a Local Board comprises so large a district that, for the convenience of the candidates, Branch Local Boards have to be formed, lists of these must also be given. All changes in the composition of the Boards must be notified to the Society of Arts.

19. N.B.—Local Boards may also usefully direct their attention to the holding of Preparatory Examinations in Elementary Subjects, either upon the system described at page 803, or upon any other system that they may prefer.

SUBJECTS FOR THE FINAL EXAMINATION IN 1870.

20. In the following paragraphs will be found brief outlines of the subjects in which Candidates may be examined, and their attention is especially drawn to this part of the Programme. In many instances the Examiner has set down certain Text-books; but, in most cases, a Candidate may exercise his own judgment as to what Text-book he uses; real knowledge, however or wherever acquired, will be accepted by the Examiners. In the following subjects, however—Political Economy including Civil Government, English History, English Language and Literature, Logic, Latin, French, German, Italian, and Spanish, the course of study is necessarily prescribed with more or less exactness.

I.—ARITHMETIC.

Examiner.—Rev. Alexander Wilson, M.A., National Society, London.

21. Practice—Simple and Compound Proportion—Interest—Discount—Insurance—Vulgar and Decimal Fractions; with the principles of a Decimal Notation in money on the basis of a pound unit.

22. The questions framed from the preceding syllabus will consist mainly of practical problems, and the Examiner will take into account not only the correctness of the answers, but also the excellence of the methods by which they are worked out, and the clearness and neatness of the working, *which must always be shown*.

23. Text Books:—Any of the modern treatises on Arithmetic, such as Hunter's Text Book (*National Society*), Colenso (*Longmans*), or Barnard Smith (*Macmillan*).

II.—PRINCIPLES AND PRACTICE OF THE METRIC SYSTEM.

Examiner.—W. Fletcher Barrett, Esq., Lecturer on Physical Science at the International College, &c.

24. Candidates will be required to have some knowledge of the history and philosophy of the Metric System; why the metre was selected as the basis; the places and possessions where this system is already in use; reasons for the general adoption of the Metric System. They will have to be acquainted with the manner in which the units of weight, capacity, and surface are derived from the metre; and should be able readily to convert the multiples and divisions of the fundamental units into English equivalents. Problems will be given on the application of the Metric System to the calculation of the volumes and weights of liquid or solid masses, the dimensions and specific gravity of which are stated; and also on the determination of the relative and absolute weight of any gas in any given vessel. Candidates will bear in mind that this examination presupposes a general acquaintance with decimal arithmetic.

25. Candidates may obtain much useful information on this subject by studying chapter 8 in Dr. Hofmann's "Modern Chemistry" (*Walton and Mabery*); No. 1 of "Arithmetical Exercises for Chemical Students," by Mr. Woodward, published by the Educational Trading Company, 29, Union-street, Birmingham; or consulting the publications of the International Decimal Association (*Bell and Daldy*).

III.—BOOK-KEEPING BY DOUBLE ENTRY.

Examiners.—John Ball, Esq., of the firm of Messrs. Quilter and Ball, and Robert G. C. Hamilton, Esq., Accountant to the Board of Trade.

26. Candidates should be prepared to answer questions as to the nature and use of the different books usually kept in a merchant's office; to journalise a series of transactions from a waste book, and having posted the entries to the ledger, to balance the accounts, to prove the correctness of the postings by a trial balance, and finally to exhibit an account of profit and loss, and a balance-sheet.

27. Text Books:—Kelly's Elements of Book-keeping (*Simpkins and Co.*). Examination-Questions in Book-keeping by Double Entry, by the Rev. J. Hunter, M.A. (*Longmans*). Hamilton and Ball's Treatise on Book-keeping (*Clarendon Press Series*).

IV.—MENSURATION.

Examiner.—John Sykes, M.A., Assistant-Secretary to the Committee of Council on Education.

28. The calculation of the areas and circumferences of plane figures bounded by arcs of circles or right lines, and solid contents of cones, cylinders, spheres, &c. Candidates will be expected to be familiar with the different rules for measuring and estimating artificers' work, such as joiners', bricklayers', masons', and plumbers' work.

29. Text Books:—Lund's Mensuration, Part III. of his Elements of Geometry and Mensuration. Tate's Mensuration. Young's Treatise on Mensuration (*Sims and McIntyre*).

V.—FLORICULTURE.

Examiner.—Thomas Moore, Esq., F.L.S., Curator of the Botanic Gardens, Chelsea, and Floral Director of the Royal Horticultural Society.

30. The Flowers of the different seasons available for Garden, Hothouse, and Greenhouse decoration: whether obtainable by natural or artificial means, and under what modes of treatment.

31. Special culture:—Ixiæ, Orchids, Allamandas, Heaths, Cyclamens, Carnations.

32. Practical Operations:—Potting; Planting; Pruning; Training; Watering; Propagation.

33. Flower-garden, Pleasure-ground, and Shrubbery:—Materials for Planting and their arrangement; Flowering plants and Foliage plants for summer gardens; Herbaceous plants; Rook plants; Florists' flowers. Geothermal culture, bed arrangements for. Lawns, formation and management of.

34. Influence of Cultivation on the formation and development of blossom buds. Action of Light, Heat, and Fresh Air on Plants. Flower forcing. Soils, nature and properties of. Composts for different classes of plants. Manures.

35. Acclimatization. Improvement or ennobling of races—by Selection; by Hybridization and Cross-breeding.

36. Construction and management of houses for plant culture; Atmospheric conditions; Heat; Moisture; Shade; Ventilation; Glazing. Ward's cases.

37. Text Books:—Lindley's Theory and Practice of Horticulture (*Longmans*). McIntosh's Book of the Garden (*Blackwood and Sons*). Thompson's Gardener's Assistant (*Blackie and Son*). Thompson's Handy Book of the Flower Garden (*Blackwood and Sons*). Williams' Select Ferns, and Williams' Choice Stove and Green-house Plants (*Williams, Holloway*).

38. The Examiner, in speaking of last year's papers, says:—"The papers show an evident improvement on those of last year, but there is still reason to complain, in many cases, of bad spelling, especially as regards the names of plants."

VI.—FRUIT AND VEGETABLE CULTURE.

Examiner.—Robert Hogg, Esq., L.L.D., F.L.S.

39. Sect. I.—Fruit-Tree Culture.—Kinds of Fruits adapted for various soils and exposures. The Propagation, Pruning, and Training of Fruit-trees. The Structure and Functions of the Organs of Trees, considered in their relation to growth and reproduction. The Forcing of Fruit-trees, and their Cultivation under glass, both in and out of pots. The Theory of Ripening, and the Principles that ought to Regulate the Preservation of Fruits after they are Ripe or their subsequent Maturation. The Packing of Fruit for transmission to great distances.

40. Sect. II.—Vegetable Culture.—The kinds and quantities of vegetable seeds and roots required for cropping gardens of given dimensions. The most approved mode of culture of the different kinds of vegetables and salads. The preparation of fermenting materials for artificial heating. The forcing of vegetables and salads.

41. Sect. III.—General Subjects.—Soils, Water, Atmospheric Air, Light and Heat, in their relation to the successful cultivation of Fruit and Vegetables. Manures and their application. The Diseases and Insects to which Fruit-trees and Vegetables are subject, and their remedies. The erection, heating, and ventilation of garden structures.

42. Text Books:—Lindley's Theory and Practice of Horticulture (*Longmans*). The Cottage Gardener's Dictionary (*Bell and Daldy*). Hogg's Fruit Manual, 3rd edition (171, *Fleet-street*). Rivers' Miniature Fruit Garden (*Longmans*). Bréhaut's Modern Peach Pruner (171, *Fleet-street*).

43. The Examiner, in his report on last year's papers, says:—"Some of the candidates would have received a much higher number of marks if they had attended more carefully to the nature of the questions. In some cases they lose sight of one-half of the question, and, consequently, lose also in the number of marks; as, for example, in the second question they are asked 'What varieties, and how many of each, they would select to plant a quarter of an acre with. In more than one instance the reply to the latter part of the question is entirely omitted. I would therefore advise future candidates to make themselves thoroughly acquainted with the question before they begin to answer it.'"

VII.—DOMESTIC ECONOMY.

Examiner.—Edward Carleton Tufnell, Esq., one of Her Majesty's Inspectors of Schools.

44. Candidates will be expected to possess such a knowledge of the essential elements of Mechanical and Chemical Physics, Chemistry,* and Physiology, and of the general outlines of Natural History, as may enable them to describe the origin and properties of the articles, and the rationale of the processes indicated or suggested by the following heads, as well as to explain the practical rules which science suggests for the promotion of health and comfort, and for turning limited means to the best advantage:—

45. Dwellings for town or country; site, general design, details of parts, materials and processes of construction and decoration; fixtures and fittings; furniture, fabrics, and clothing; the philosophy of food based on the functions and requirements of the human frame, and on the chemical and hygienic properties of proximate constituents; unwholesome food; adulterations; preservation; condiments; culinary processes; refreshing, stimulating, and intoxicating beverages; fuel and other household stores; means for promoting a vigorous development of the frame, and for maintaining the healthy exercise of its functions; means of safety; the care of the sick; household management and accounts; best ways of investing savings and of providing against emergencies.

46. The questions will be comprehensively framed, so as to give to candidates a free scope for making evident the extent of their studies in the various departments of Domestic Economy. Sound practical notions of the most essential points throughout the whole range of subjects are desired, rather than a deep knowledge of a few of them.

47. Text Books:—Tegetmeier's Domestic Economy (*Home and Colonial School Society, Gray's Inn-road*). Healthy Dwellings, &c., a lecture by Henry Roberts, F.S.A. (*Ladies' Sanitary Association, 8, Pont-street, Belgrave-square*.) The Useful Arts employed in the Construction of Dwelling-houses; in the Production of Clothing and of Food (*Longmans*). Lankester's Lectures on Food, 1st and 2nd Course. Tomlinson's Warming and Ventilating (*Weale's Series*). The necessary Physical Chemical, and Physiological knowledge may be obtained from Chambers's Educational Course on the Sciences (*W. and R. Chambers*).

VIII.—POLITICAL ECONOMY, INCLUDING CIVIL GOVERNMENT.

Examiner.—Jacob Waley, Esq., M.A., Emeritus Professor of Political Economy in University College, London.

48. Political Economy is the science which investigates the laws regulating the production, the distribution, and the exchange of wealth. The subject embraces questions which concern not only the wealth of nations, but also the wealth of individuals.

49. Candidates are recommended to read "Principles of Political Economy," by Mr. J. S. Mill (cheap edition). Those who have not leisure to read Mr. Mill's work may study the outlines of the subject in "A Manual of Political Economy," by Professor Fawcett; or "A Manual of Political Economy," by Professor Thorold Rogers.

50. For Civil Government, Candidates should study Creasy's "Rise and Progress of the English Constitution" (*Bentley, New Burlington-street*).

IX.—GEOGRAPHY.

Examiner.—Wm. Hughes, Esq., F.R.G.S., Professor of Geography in King's College, London.

51. Candidates must show a sound knowledge of Elementary Geography, physical and descriptive. Such knowledge must embrace an acquaintance with at least

* The use of symbols and equivalents will be optional.

the outlines of the great natural features of the globe, the political divisions of countries, and the localities of towns and other places of importance. This knowledge will be looked for in fuller extent with regard to the British Islands, and the various portions of the British Empire, than with regard to other countries. The recent changes in the map of Europe—especially in the cases of Germany and Italy—with the altered relationships between the various German States, may also be referred to as amongst the topics that prominently demand attention on the part of the geographical student. Canada, the United States, and British India are proposed as subjects for more especial study on the part of the intending Candidates for the present year's Examinations. The Candidate will be required to sketch, from memory, a map of any one of those, or of any single European country that may be named by the examiner. Such sketches need not possess accuracy of detail, but should at least show the general direction of coast-lines, mountain-chains, or river-courses, with the localities and names of the principal towns.

52. Candidates who aim at the highest class of certificate should also be prepared to answer such questions upon Geography, in its relation to the Physical Sciences and the History of Mankind, as involve a general acquaintance with the subject of climate, the laws of Meteorology, the Distribution of Plants and Animals over the Globe, the leading outlines of Geology, the Ethnographic Division of the Human Race, and the commercial resources of different lands. This kind of knowledge is looked for, not in place of geographical knowledge of a more elementary kind, but as supplementary to it, and throughout based upon it.

53. Text Books:—Manual of Geography, by William Hughes (*Longmans*). Geography of British History, by William Hughes (*Longmans*). Guyot's Earth and Man (*Longmans*). Page's Introductory Text Book of Geology (*Blackwood*). The School Physical Atlas (*either Johnston's, Philips's, or that published by the National Society*).

X.—ENGLISH HISTORY.

Examiner.—The Rev. J. S. Brewer, M.A., Professor of Modern History in King's College, London.

54. English History and English Constitutional History.

55. Text Books:—Manual of English History, by Ross; or The Student's Hume. Creasy's English Constitution.

56. Special subject:—The Reign of Henry III. Lingard or Macintosh.

XI.—ENGLISH LANGUAGE AND LITERATURE.

Examiner.—Rev. Samuel Clark, M.A., Chairman of the Board of Examiners.

57. All candidates will be required to parse correctly a passage from the first hundred lines of "Paradise Lost" (Book I.), and to answer questions on the elements of English grammar. In parsing, they will have not merely to state the part of speech to which each word belongs, but to explain its connection with other words in the sentence. They will also be expected to write a letter or a short English essay, on a subject to be given in the paper.

58. Candidates for a first-class certificate will have, in addition to the above, to answer questions on the history of the English Language, and to explain passages from the prologue to Chaucer's "Canterbury Tales," and from Shakespeare's "Julius Cæsar."

59. Any of the elementary English grammars in common use may be studied by candidates, and due allowance will be made by the examiner for the different grammatical systems and technical terms that are adopted in them.

XII.—LOGIC AND MENTAL SCIENCE.

Examiner.—J. D. Morell, Esq., LL.D., one of Her Majesty's Inspectors of Schools.

60. Logic: Candidates will be expected to answer questions on the different processes of thought, and the symbols by which they are expressed. Every candidate must be prepared to analyse examples of reasoning, and to detect fallacies.

61. Text Books: Whateley's Elements of Logic, or Morell's Handbook of Logic.

62. A Candidate for a second or third-class Certificate will be expected to prepare, in addition, any one of the following books which he may select:—Mill's system of Logic, Book III., Of Induction; Dugald Stewart's Outlines of Moral Philosophy (McCosh's Edition); Sir William Hamilton's Lectures on Metaphysics, Lectures xx to xl.; or Morell's Elements of Mental Philosophy (*Longmans*).

63. A Candidate for a first-class Certificate will be expected to prepare any two of these works which he may select.

XIII.—LATIN.

Examiner.—Rev. F. Temple, D.D., Head Master of Rugby School.

64. Cicero, De Officiis, Lib. iii. Virgil Cæneid, ix.

XIV.—FRENCH.

Examiner.—Alphonse Mariette, Esq., M.A., Professor of French, King's College, London.

65. The Examination Paper will be divided into three parts.

66. The first will comprise grammatical questions and an extract from a modern French writer, to be translated into English. Candidates merely aiming at a 3rd class certificate should confine themselves to this first part.

67. The second part will comprise, together with a few grammatical questions, an English extract to be translated into French, and a list of idiomatic expressions to be rendered from French into English, or *vice versa*. This should be done satisfactorily by the Candidate who aims at a 2nd class certificate.

68. In the third part, Candidates for a 1st class certificate will have to translate an English extract into French (to which great importance is attached), and to answer properly (*in French*) some elementary questions on the two following subjects:—

1. French literature during the sixteenth century.
2. The History of France, from the death of Louis IX. to that of Louis XII. (1270—1516).

69. Books recommended:—Mariette: Half-Hours of French translation (*Williams and Norgate*, London and Edinburgh). Nisard: Histoire de la Littérature Française, vol. I. (*Williams and Norgate*); or Demogrot, Histoire de la Littérature Française (*Williams and Norgate*). Duruy: Histoire de France, vol. I. (*Williams and Norgate*).

XV.—GERMAN.

Examiner.—Dr. Buchheim, Professor of German in King's College, London; Examiner in German to the University of London, &c.

70. The German examination paper will consist of three parts.

71. The first will consist of passages from Schiller's "Neffe als Onkel," and of questions on German accidence. This part will serve as a test for a third-class certificate.

72. The second part will consist of passages from Goethe's "Egmont," of easy English sentences to be rendered into German, and of some advanced grammatical questions. Candidates for a second-class certificate will be expected to work this portion of the paper, together with the grammatical questions in part one.

73. The third part will consist of (a) passages from Schiller's "Wallenstein's Tod;" (b) an English extract to be rendered into German; (c) questions on German

syntax; (d) historical questions on the period from the peace of Luneville, 1801, to the establishment of the German Confederation, in 1815; (e) literary questions on the above-mentioned period, more particularly on the "Freiheits und Vaterlandsdichter" and the "Schwäbische Dichterschule." Candidates for a first-class Certificate are expected to work part three.

74. Candidates for a first-class Certificate are recommended to read some of the works of the poets alluded to, and not to content themselves with the mere biographical outlines given by the manuals.

75. Books and editions recommended:—Buchheim's "German Prose Composition" (*Bell and Daldy*). "Egmont," Buchheim's edition, (*Clarendon Press Series*). Kohlrausch's "Kurze Darstellung der Deutschen Geschichte." Weber's "Geschichte der Deutschen Literatur." Schiller's "Wallenstein," Buchheim's edition (*Bell and Daldy*).

76. The Examiner, in his report on last year's papers, says:—"The principal defects I have to point out in general are these:—1. Insufficient practice in the conjugation of verbs, both regular and irregular. 2. Imperfect knowledge of the rules referring to the construction of sentences. 3. Want of a sufficient German vocabulary, which defect showed itself particularly in the translations from English into German. The deficiency just pointed out arises, in my opinion, from the circumstance that the candidates, though well prepared in the subjects which have been set, do not seem to have read much German besides."

XVI.—ITALIAN.

Examiner.—Professor Pistrucci, King's College, London.

77. Candidates for a first-class certificate will be required—(1st) To translate into English passages from some of the principal Italian poets and historians, and to answer the grammatical questions which may be added to those passages. (2nd) They will also have to translate into Italian an extract from some English author; (3rd) and turn a few familiar idioms into their equivalents, from Italian into English, and *vice versa*.

78. For second and third-class certificates candidates will translate into English some selection from Metastasio's *drummi*, and Foscolo's or Manzoni's prose works, and answer a certain number of grammatical questions.

79. The Examiner, in his remarks on last year's work, inculcates a more diligent application to Italian grammar, of too deficient a knowledge of which he has again met many instances; this remark applies more especially to the candidates for second-class certificates.

XVII.—SPANISH.

Examiner.—B. B. Aguirre, Esq., Lecturer on Spanish in King's College, London.

80. Candidates for a first-class certificate will have to translate an English passage into Spanish, to render into English or French several idiomatic phrases, and to write in Spanish a short essay.

81. Candidates for a second-class certificate will have to translate the half of the passage for the first-class, and to render into English or French some historic *chistes* and two letters of business.

82. Candidates for a third-class certificate will have to translate from Spanish into English, and to answer several grammatical questions.

83. Books recommended: Spanish *Gil Blas*, Nueva *Floresta Española*, por Dn. Ignacio Castellar; *Trozos escogidos de los mejores hablistas españoles*, por Dn. Carlos de Ochoa; *Don Quixote*, translated into English by Charles Jarvis.

XVIII.—THEORY OF MUSIC.

Examiner.—John Hullah, Esq.

84. Notation, the modern modes, intervals, time signatures, the staff, transposition, modulation, terms and characters in common use.

85. The Elements of Harmony.

86. Musical History and Biography.

87. Arrangements must be made, in the Previous Examinations by the Local Boards, to test Candidates, by oral examination, in their knowledge or appreciation of the *sound* of musical successions and combinations. A form of the test to be used for this purpose by the Local Board at the Previous Examination, will be sent by the Council to such Local Boards as may *apply for it* in due time before the Previous Examination.

XIX.—ELEMENTARY MUSICAL COMPOSITION (Tonic Sol-fa SYSTEM).

Examiner.—G. A. Macfarren, Esq.

88. This Examination is open to all, on equal terms, on whatever system they may have studied.

89. The examination papers will announce the exercises, both in the Tonic Sol-fa Nomenclature and in that which is most commonly understood by musicians who have studied upon other systems. The exercises may be written either in the Common Notation or in the Tonic Sol-fa Notation.

90. Tonic Sol-faists are admitted to this Examination on showing their Certificate of Honourable Mention in Elementary Composition, and their Member's Certificate of "General Musical Culture," when giving their names to the Secretary of the Local Board. These Certificates imply more general knowledge than is absolutely necessary for the Examination; therefore Tonic Sol-faists, as well as others, *whatever the system on which they have studied*, may also be admitted by passing the previous test described below.

91. The Candidates will submit themselves to this test at the Previous Examination by the Local Board. The test will consist of the following requirements:—

92. (a) *Memory and Notation.*—The candidate to bring copies of the melody of twelve psalm tunes, or other tunes of equal length, and write down correctly from memory any one of these the examiner calls for. His writing from memory, with the copy he brought, to be sent to the Secretary of the Society of Arts. This may be done in either notation.

93. (b) *Time.*—The candidate to sing in correct time four bars (or measures) given in the examination paper. They will be selected from Handel's "Messiah." This may be done from either notation. The test will be printed in both.

94. (c) *Sight Singing.*—The candidate to pitch the key-tone and sol-fa at first sight, and afterwards sing to the open syllable "lah" a tune given in the examination paper. He may, if he please, omit the sol-fa'ing. The tune will contain transition or modulation of the second remove, that is, adding or subtracting two sharps or two flats in the signature, and of the third remove, that is, adding or subtracting three sharps or three flats in the signature; but it will not contain any difficulty of time. The test will be printed in both notations.

95. (d) *Ear Exercise.*—The candidate to copy by hearing it, the Air and Bass of a simple single chant which will be given in the examination paper. Although only Air and Bass are to be copied, the four parts are to be sung or played together, the key-tone being first sounded. The chant should be played or sung at the rate at which the pulse beats, or M. 60, the reciting tone being reckoned as two beats. This may be done three times. There should be a pause of a quarter of a minute between the two parts of the chant, and of half a minute between the repetition of the chant.

96. (e) *Harmony Analysis.*—The candidate to write the Tonic Sol-fa analysis, or figure the bass of a psalm tune included in the examination paper, printed in both notations.

97. (f) *Knowledge of Cadence.*—The candidate to write from memory examples of any cadence of the major or minor mode which is in common use. This may be done in either notation.

98. (g) *Knowledge of Harmony*.—The candidate to harmonise, for three or for four voices, a psalm tune given in the examination paper. This may be done in either notation.

99. (h) *Invention*.—The candidate will write a brief two-part fugue on a theme to be given in the examination paper. This may be done in either notation. The members of the Local Board will report to the Secretary of the Society of Arts on Exercises 2 and 3, giving one mark for "fairly done," 2 for "well done," and 3 for "excellently done." The other exercises will be sent to the Secretary of the Society of Arts for examination by the Society's Examiner.

100. Special "previous examination" papers will be supplied to the Local Boards *applying for them* to the Secretary of the Society of Arts before the 10th of February. The answers will be sealed and sent to London, *with numbers attached*, in the same way as those for the principal Examinations; and the Local Boards will, in the course of a few days, receive a list of the papers which will qualify their writers for further examination.

101. The Examiner, in reporting on last year's work, says:—"I find, on the whole, evidence of much musical fluency, but of little real talent; a few candidates, however, indicate decided exceptions from this last remark. I find that the first exercise seems to have been more perplexing than the other two; in this the metre was prescribed, but no verses given, and certain modulations and cadences were required. Hence it is shown that there is greater difficulty in writing within defined limits, than when the invention is left free. I find that the compositions set to the prose verse from the Psalms make more pretension than those set to metrical verses, but are, for the most part, less meritorious as they are more ambitious. I think that the signs of musical aptitude which the examination affords are in a high degree satisfactory, and that they are still more promising of progress. I have counted as faults any errors in writing the notes, considering that all who practise music must begin by understanding either its usual or its exceptional characters. I have made a small deduction also for not writing the words under the notes, because this is a very unmusicianly method, to say nothing of the extra trouble it has given in judging the accentuation, which, indeed, has not always been possible."

PROPOSED VIVA-VOCE EXAMINATION IN MODERN LANGUAGES.

102. The following memorandum, kindly furnished by Mr. Hyde Clarke, a member of the Council, is issued for the information of any Local Board who may have facilities for carrying out such examinations as those described therein:—

103. In complying with the request of my colleagues, that I should give a note for the consideration of Local Boards, on suggestions for extending the utility of our examinations in modern languages, it may be desirable that the matter should be explained a little more fully.

104. The ground for my proposition is the observation that, from the want of knowledge of local languages, Englishmen are supplanted by Germans in many countries, particularly of late years, and, as a consequence, English goods are being supplanted by German imitations, with forged English trade-marks and labels.

105. Speaking generally, an Englishman will be found abroad in the position of a merchant, and a Frenchman in that of a petty shopkeeper, dealing in "articles de Paris." In a Spanish country, the English merchant will speak and write the language, but in other countries he neglects the local language, and employs interpreters, brokers, and native clerks. These latter always get rich, and perhaps the merchant may; but, in the end, the merchant or his children become bankrupt, and the native followers carry on the business. A man who does not carry on his own affairs direct with the native producer, in the language of the latter, is of course exposed to the compe-

tition of the native or foreigner who can. Hence we get the result of English merchants not increasing proportionately in number, and, in many cases, the trade in English goods passing into the hands of other houses. The cause often assigned for this is, the unscrupulous trading of natives, but the true interpretation is, far oftener, ignorance by Englishmen of local languages.

106. The employment for English clerks is narrowed, as they are only useful for keeping the English correspondence, or as ledger clerks.

107. The young German at once begins to learn the local languages colloquially and by grammar. He is able to travel about and acquire a better knowledge of the country and the natives than the Englishman. He is more useful as a clerk than the latter, and he can set up for himself as a broker, small store-keeper, or in a petty commission agency, laying the foundation for a large business, as he can get credit in his store more easily for German goods than English goods. Although the natives want English goods, he who speaks the language supplies them with imitations made to suit the markets. The hardware trades of Birmingham, Sheffield, &c., particularly suffer by this, not less than every other branch of manufacture.

108. The question arises whether the German has any natural superiority over the Englishman in learning or speaking languages, and the answer must be, certainly not. The Germans, although having many admirable linguists, have generally a disagreeable pronunciation. The English in all times have been good linguists, and in the present day it is only necessary to refer to our people in India. To go back, to show there is nothing inherently incompatible in our organisation, it will suffice to call to mind the ladies of the time of Henry VIII. and Elizabeth, who could speak English, Flemish, Latin, French, Spanish, and Italian.

109. These accomplishments were then more widely diffused in society, but if they are not now found, there is no effective reason why they should not now be acquired. The cause is, that we have gone back educationally. Classical instruction, for two centuries, suppressed modern languages, and the system of teaching the grammar of dead languages has crippled the teaching of spoken languages. Ignorance has nursed prejudice, until at length, instead of a man's attainments as a linguist bringing him reputation, they may be employed by persons professing to be scholars to discredit his intellectual capacity. Somebody lately wrote an article in a popular magazine to show that a man who went beyond reading the classics, and learned a living language well, must sacrifice his individuality and his originality.

110. The whole result is, that while England has rendered the foremost service in the advancement of comparative philology and linguistics, she has no credit for it, and that we lose by neglect what the great masters of the past generation have done, and those of the present are doing, for our national reputation.

111. Popular ignorance consequently stands in our way. We have no public school of linguistics even in the metropolis, and the wants of the public service and the commercial community are unprovided for. With a great expenditure for acquiring modern languages, very little practical benefit is obtained.

112. A language may be acquired for various purposes, and in various ways, to speak it enough for travelling, to read a newspaper or price current, or to write it classically. The system adapted for teaching is in reality chiefly directed to the latter end, and if sufficient time and attention be given, will produce pupils who can write a good French or German essay, as well as a fair Latin prose composition. If, however, a person has not sufficient time to reach this goal, he will have learned nothing that he can turn practically to account, although he may have learned the French grammar as thoroughly as the Latin.

113. The truth is, the process for teaching composition

in a language is not the same as that for teaching speaking or reading, nor do men of science, who become accomplished as linguists, go the longer way to work.

114. What we want for general and practical commercial purposes is, to have people who can go to India, Spanish America, the Brazils, the Levant, and Russia, speaking the languages enough to work their way about, and to read a paragraph in a newspaper, an account, or an hotel bill, and a common commercial letter so as to get at its general meaning, the said letter being perhaps written in *patois*, and not in the high style.

115. To carry this out is no new experiment, for the necessities of our government in India have long since provided us with an example. If the civilian was highly trained at Haileybury in the grammar of Sanskrit, Persian, and Arabic, each regiment wanted its officers who could make their way in the language of their troops, who, whatever their proficiency might be in the written character, could, on the examination day, carry on a conversation on matters of duty with a private sentry or soldier taken by chance from the ranks, and read up such common documents as are of ordinary use. These "vernacular" examinations are the basis of the connection between our European officers and the population. They do not necessarily produce great scholars, but they prepare the way for many to become such.

116. The Society of Arts has already taken up the subject of examinations in modern languages, and the number of candidates in French and German attests the good it is doing in this respect.

117. The working of papers does not, however, meet the lower wants. It does not encourage the working engineer, who picks up sufficient French to take employment abroad, and who has not the time to study the detailed structure of the French language. Eight students represent the demands of our relations with Spain, Central and South America, Cuba, and the Philippines. This cannot be enough. It would not even supply us with waiters for the West India Mail steamers.

118. What we have to aim at is, to give the working-classes and the poorer middle-classes better chances of employment, in all occupations where the practical knowledge of a foreign language can be of use. The chief of such languages are—

Netherlandish or Dutch.	Turkish.
German or High Dutch.	Arabic.
Russian.	Hindustanee.
French.	Bengalee and Indian Vernaculars.
Spanish.	Chinese.
Portuguese.	Japanese.
Italian.	

119. There are numbers of our working men, having already some practice in these languages, who might be encouraged to persevere to acquire more, and to perfect themselves in what they have attained.

120. The examinations can only be carried on in certain centres, where there are learners and examiners, thus:—

London	} For most of the languages enumerated.
Dublin	

Southampton ..	} For French, Spanish, and Portuguese.
Plymouth	
Cork	
Liverpool	} For Spanish, Portuguese, German, and French.
Manchester ..	
Leeds	} For German and French.
Sheffield	
Bradford	
Birmingham ..	
Hull	
Newcastle	} For the Northern Languages.
Aberdeen	

121. The examinations should be—

- (a) Conversation, divided into grades of proficiency.
- (b) Translations from newspapers and commercial documents.

122. The Examining Boards should consist of—

- (a) Members of Local Boards of the Society of Arts.
- (b) Consul, merchant, or native of the nation speaking the language of examination.
- (c) A teacher of the language.
- (d) Englishmen conversant with the language.

123. No prizes should be given, but only certificates of qualification. These would be given by the Society of Arts, on the recommendation of the Local Boards.

124. A candidate might pass in conversation alone. The certificate might express sufficiency for the business of an engineer, waiter, &c., for it is of more value to possess the technical terms of some trade than to acquire greater general proficiency.

125. It is to be expected that the consuls and natives of many states will take an interest in the preservation of their own language. Surely, at Liverpool, there must be consuls and natives from the many countries of Old Spain and the American world who can promote such a purpose, and, in the result, give a real encouragement to the liberal study of Spanish literature.

126. For the purposes of these examinations it may be further useful to divide the candidates into

- (a) Working-class, with a lower standard.
- (b) General.

127. The Council, having considered the above memorandum, are willing, in places where Special Boards, as above described, can be formed, to grant Certificates on their recommendation.

128. The Examinations may be held at any time during the month of April that the Special Board may fix, their report being sent in to the Secretary of the Society of Arts not later than the 30th of April.

VOCAL AND INSTRUMENTAL MUSIC.

129. The Council suggest that, where arrangements can be made, Local Boards should organise musical performances, both vocal and instrumental, and should be prepared to return on a form, to be hereafter supplied, certain particulars respecting those candidates who may display remarkable aptitude for further instruction, and may desire to obtain it.

PRIZES FOR 1870.

THE PRINCE CONSORT'S PRIZE.

130. His Royal Highness the late President of the Society was pleased to offer annually to the Candidate who, obtaining a Certificate of the First-class in the current year, in any of the subjects (this year nineteen in number), shall have obtained in that year and the three years

immediately preceding it, the greatest number of such Certificates,* a PRIZE of TWENTY-FIVE GUINEAS, and this Prize Her Majesty the Queen has graciously intimated her intention to continue. This Prize cannot be taken more than once by the same Candidate. It will be accompanied by a Certificate from the Society of Arts, setting forth the special character of the Prize, and the various Certificates for which it was granted.

GENERAL PRIZES.

. None of these Prizes will be awarded to a Candidate who does not obtain a Certificate of the First-class in the subject.

1. Arithmetic (F)	{ First Prize.....£5 Second Prize.... 3	11. English Language and Literature (F)	{ First Prize£5 Second Prize.... 3
2.†The Metrical System (F)....	{ First Prize 5 Second Prize.... 3	12. Logic and Mental Science ..	{ First Prize 5 Second Prize.... 3
3. Book-keeping (F)	{ First Prize 5 Second Prize.... 3	13. Latin	{ First Prize 5 Second Prize.... 3
4. Mensuration	{ First Prize 5 Second Prize.... 3	14. French (F)	{ First Prize 5 Second Prize.... 3
5.‡Floriculture	{ First Prize 5 Second Prize.... 3	15. German (F)	{ First Prize 5 Second Prize.... 3
6.‡Fruit and Vegetable Culture	{ First Prize 5 Second Prize.... 3	16. Italian (F)	{ First Prize 5 Second Prize.... 3
7.‡Domestic Economy (F).....	{ First Prize 5 Second Prize.... 3	17. Spanish (F).....	{ First Prize 5 Second Prize.... 3
8.‡Political Economy and Civil Government	{ First Prize 5 Second Prize.... 3	18. Theory of Music (F).....	{ First Prize 5 Second Prize.... 3
9.‡Geography (F)	{ First Prize 5 Second Prize.... 3	19.§Elementary Musical Composition (Tonic Sol-fa System) (F)	{ First Prize 5 Second Prize.... 3
10. English History (F)	{ First Prize 5 Second Prize.... 3		

SPECIAL PRIZES.

COUNCIL PRIZE TO FEMALES.

131. The Council of the Society offers to the female candidate who, obtaining a certificate of the first-class in the current year, in any of the subjects (this year nineteen in number), shall have obtained, in that year and the two years immediately preceding it, the greatest number of such certificates,|| a PRIZE of TEN GUINEAS. This Prize cannot be taken more than once by the same candidate. It will be accompanied by a certificate from the Society of Arts, setting forth the special character of the Prize, and the various certificates for which it was granted.

132. The whole of the General Prizes are offered to female candidates on the same terms as to male candidates; and, in each of the subjects marked F, an additional prize of £2 is offered to the *female* candidate who gets the highest number of marks with a certificate of the first-class. This special prize may be taken with, or apart from, any other prize.

133. In addition to the First and Second Prizes in Political Economy offered by the Society of Arts, Mrs. Harry Chester offers a Third Prize of £2, and three prizes of books, value £1 each, to candidates taking First-class Certificates in that subject.

134. In addition to the First and Second Prizes in Domestic Economy offered by the Society of Arts, Mr. Thomas Twining, a Vice-President of the Society, offers a Third Prize of £2, and three prizes of books, value £1 each, to candidates taking First-class Certificates in that subject.

135. In addition to the Prizes in Geography, offered by the Society of Arts to candidates taking Certificates of the First-class, the President and Council of the Royal Geographical Society offer an additional prize of £5 to the candidate who, taking any grade of certificate in Geography, obtains the highest number of marks in that subject.

* In case of equality in the number of such Certificates, the Council, in making the award, will take into consideration the ability shown by such Candidates in the examinations generally. First-class Certificates, obtained in the three preceding years, in any of the subjects now removed from the Programme (see page 791) will be counted in making the award.

† Earl Fortescue, President of the British Branch of the International Decimal Association, contributes £5 towards these Prizes.

‡ For Extra Prizes in these subjects see paragraphs 133, 134, 135, 136, 137.

§ These Prizes are offered by the Tonic Sol-fa Association.

|| In case of equality in the number of such Certificates, the Council, in making the award, will take into consideration the ability shown by such Candidates in the examinations generally. First-class Certificates, obtained in the two preceding years, in any of the subjects now removed from the Programme (see page 791) will be counted in making the award.

136. In addition to the Prizes in Floriculture, and in Fruit and Vegetable Culture, offered by the Society of Arts to Candidates taking Certificates of the First-class, the Council of the Royal Horticultural Society offers two additional prizes of £5 and £3 respectively to the two Candidates who, taking any grade of Certificate in Floriculture, obtain the highest number of marks in that subject; also two additional prizes of £5 and £3 respectively to the two Candidates who, taking any grade of Certificate in Fruit and Vegetable Culture, obtain the highest number of marks in that subject. These Prizes are offered only to Candidates who are *bonâ fide* professional gardeners.

137. In addition to the Prizes in Floriculture, and in Fruit and Vegetable Culture, offered by the Society of Arts to Candidates taking Certificates of the First-class, the Proprietors of the *Gardener's Chronicle* offer three additional prizes of £3, £2, and £1 respectively, to the three Candidates, being *bonâ fide* professional gardeners, who, obtaining a Second-class Certificate, at least, in Floriculture or Fruit and Vegetable Culture, shall obtain the highest number of marks in one of these subjects, and also a Second-class Certificate, at least, in Book-keeping or Mensuration.

ADDITIONAL PRIZES.

PRIZES FOR WRITING FROM DICTATION.

138. The Council offers three prizes, of £3, £2, and £1 respectively, to the three Candidates who shall send in the best exercises, written from dictation.

139. A passage from an English author, set by the Rev. Samuel Clark (Examiner in the English Language) will be sent under seal to such Local Boards as may apply for it. On the evening fixed (Friday, the 29th April) a member of the Local Board should first read the passage aloud to the Candidates at the ordinary speed. He should then read it slowly, so that it may be written out by them, and they should afterwards have a quarter of an hour for correcting the punctuation, in which, of course, they should receive no assistance.

140. The exercises, when completed, should be submitted to the judgment of two members of the Local Board, to whose discretion it should be left to forward to the Society of Arts such exercises as, in their judgment, are so excellent as to have a fair chance of obtaining a prize.

141. In judging of the merits of the exercises, the handwriting, spelling, and punctuation, will all be considered by the Examiner. No certificates will be given.

PRIZES FOR WRITING.

142. The Council offers four Prizes, of £5, £3, £2, and £1 respectively, for the four best specimens of handwriting, as shown in any of the Papers worked in any subject, the letters being well-formed, and the writing being distinct and legible.

143. Mr. Henry Cole, C.B., a Vice-President of the Society, offers three Prizes of £3, £2, and £1 respectively, for the best writing and manuscript-printing on a foolscap page, as follows:—

One line of Italic writing, of one-inch letters.
One line of Roman capitals, of one-inch letters.
One line of Italic writing, of half-inch letters.
One line of Roman capitals, of half-inch letters.

One line of Italic writing, of quarter-inch letters.
One line of Roman capitals, of quarter-inch letters.
One line of Italic writing, of one-eighth inch letters.
One line of Roman capitals, of one-eighth inch letters.

144. The Roman capitals should be formed of single (not double) lines.

145. The writing should be done in presence of some members of the Local Board, on a day in April, to be fixed by them, and only those specimens that are of sufficient merit to have a chance of obtaining a prize should be sent to the Secretary of the Society of Arts. These should be forwarded by the 30th April. No certificates will be given.

LOCAL EDUCATIONAL BOARDS.

The following is a List of the places at which Local Boards have already been formed, with the names of the Secretaries, from whom intending Candidates and others may obtain information relative to the Examinations:—

LOCAL BOARDS.	SECRETARIES.
Aberdeen	{ Mr. J. Sinclair, Mechanics' Institution, Aberdeen.
Accrington Mechanics' Institute	{ Mr. John Barlow, Croft-house, Blackburn-road.
Alderley Edge Educational Institute	{ Mr. Alfred Wilkins.

Alnwick	{ Mr. Adam Robertson, jun., 12, Narrowgate, Alnwick.
Alton	{ Mr. John Bryant, Post-office, Alton.
Ashford	{ Mr. Thos. Nesbit, 11, Dover-place, Ashford.
Ashton-under-Lyne	{ Mr. George Hay, Bank-top Academy.
Bacup Mechanics' Inst.	{ Mr. James Pilling, Goose-hill.
Banbridge (Ireland)....	{ Mr. Gilbert McKenna, Dro-more-street.
Banbury	{ Mr. J. H. Beale, Mechanics' Institute, Banbury.

Belfast (Acad.) Science School.....	Mr. James McNeil.	Deptford	Mr. T. Earland, 2, Wellington-grove, Greenwich-road, E.C.
Belfast Literary Institute	Rev. W. C. McCullagh.	Derby	Mr. H. M. Holmes, London-road, Derby.
Belfast, (Union - place Science Schools.....)	Mr. John Anderson, 11, Carnmoney-street, Belfast.	Devonport	Messrs. W. Mogg and S. Chapple, Mechanics' Inst.
Bewdley and Wribben-hall	Rev. J. Fortescue.	Droitwich	Mr. Jeacock.
Birmingham and Mid-land	Mr. Edwin Smith, Birmingham and Midland Institute, Birmingham.	Droylsden Educational Institute	Mr. Jonathan Hadfield, Droylsden.
Bishop's Stortford	Mr. F. W. Nash, B.A., Birchanger, Bishop's Stortford.	Dudley Mechanics' Inst..	Mr. Thomas Brown.
Blackburn Science School	Mr. Giles Parkinson, London-terrace, Blackburn.	Earlstown	Mr. Charles Shaw, Earlstown, Newton-le-Willows.
Blackley Science Class..	Mr. Schofield, Ashenhurst, Blackley, near Manchester.	Ebley	Mr. H. Webb.
Blandford	Mr. J. B. Green.	Eccleshill (Leeds).....	Mr. Isaac Bakes.
Bodmin	Mr. Josiah Philipps, Little Berry-cottage, Bodmin.	Edinburgh Watt Institu- tion and School of Arts	(Vacant.)
Bollington Useful Know- ledge Society	Mr. T. Bradley.	Eveham.....	Rev. M. Wood.
Bolton Mechanics' Inst.	Mr. Isaac Barrow, 16, Com- mission-street, Bolton.	Failsworth Mech. Inst., near Manchester	Mr. John Briery, Moston, Failsworth.
Bolton Science and Art School	Rev. Jos. Lowe, M.A.	Farnham and Aldershot..	George Dewdney, B.A.
Bradford Mech. Institute	Mr. Jos. Holbrey.	Faversham, The Institute	Mr. Samuel G. Johnston, Town Clerk, Faversham.
Brighton	Mr. Barclay Phillips, 75, Lansdowne-pl., Brighton.	Freetown Inst., Glossop	Mr. William Swire, High-st., Glossop.
Bristol Young Men's Christian Association	Mr. W. Henry Williams, 4 St. James's-square, Bristol.	Galgate	Mr. Wm. Parkinson, Rail- way-cottage, Galgate, Lan- caster.
Bromley (Kent) Lit. Inst..	Mr. W. W. Baxter.	Garforth Working Men's Club	Mr. A. Woodhead.
Bromsgrove	Mr. W. Holyoake	Gilford (Ireland)	Dr. Henry McBride, Gilford, co. Down.
Burnley Church Literary Institute	Mr. Wm. Austin Lee.	Gisborough	Messrs. Wm. K. Cockerline and J. Sanderson.
Burnley (East Lancashire Union Institutions) ..	Mr. J. Sutherland.	Glasgow Athenæum....	Mr. Gavin Chapman, Ruby- street, Bridgeton, Glasgow.
Burnley Mechanics' Inst..	Mr. J. Sutherland.	Glasgow Institution....	Mr. John Craig, F.E.I.S., Glasgow Institution, 280, George-street.
Burrage-rd. (Plumstead) Classes	Mr. J. Hammond.	Glasgow Mechanics' Inst.	Mr. John Dyer, 38, Bath- street, Glasgow.
Bury Athenæum (Lan- cashire)	Mr. T. W. Probert.	Glasgow Popular Evng. Classes, Andersonian University	Mr. G. Martin, 11, Great- Western-road.
Bury St. Edmund's	Mr. J. Jackson, Head Master of the Guildhall School.	Glasgow Tonic-Sol-Fa Choral Society	Mr. Colin Brown.
Canterbury.....	Rev. Edgar H. Cross.	Glodwick Mut. Improve- ment Society, Oldham	Mr. Jeremiah Green.
Carlisle Mechanics' Inst.	Mr. J. Sunders, Mechanics' Inst., Fisher-st., Carlisle.	Gloucester	Dr. S. Brady, 4, Norfolk- terrace.
Chapeltown (near Bolton) Institute	Mr. Thos. Haworth, Victoria Mills, Chapeltown, nr. Bolton	Greenwich (St. Mary's National Schools	Mr. William Howarth.
Chatham (St. Mary's Sci. School	Mr. T. Wilkins.	Halifax Mechanics' Inst..	Mr. James Watson.
Chelmsford	Mr. W. Cutts.	Halifax Working Men's College	Mr. G. Gibbs, Haley-hill, Halifax
Cheltenham (Whitworth School of Science)....	W. S. Davis, LL.D.	Hanley Castle	Rev. J. B. Cox.
Chelt-nham Working Men's Club	Mr. W. Dugdale.	Hansworth Working Men's Club	Mr. S. Richardson, 59, Bar- ker-st., Lozells, Birming- ham
Chorley Mechanics' Inst.	Messrs. T. Rigby and F. Sargeant.	Hartlepool West	Messrs. E. Cory and J. P. Fea.
Christchurch	(Vacant.)	Haslingden	Dr. John Binns.
Clitheroe Mechanics' Inst.	Mr. John Gornall, Moor- lane, Clitheroe.	Hastings and St. Leo- nards	Mr. J. Charles Savery, 12, York-buildings, Hastings.
Colne Mech. Institution	Mr. J. Phillips.	Hatherlow and Bredbury..	Mr. T. Greenwood.
Compstall Literary Inst. (near Stockport	Mr. John Fernley.	Haughton Dale	Mr. J. T. Fallows, Haughton Dale Works, Denton, Man- chester.
Cork (Young Men's So- ciety)	Mr. James J. Ryan, 21, Rich- mond-hill, Cork.	Hertford	Mr. John Lyon Foster.
Crawshawbooth, near Rawtenstall	Dr. Kerr, Crawshawbooth, Rawtenstall, near Man- chester.	Heywood	Mr. George Fairbrother, Hey- wood Mechanics' Inst.
Crewe	Mr. J. E. Cubben, Mechanics' Institute, Crewe.	Holbeck (Leeds)	Messrs. John Nichols, jun., and G. Higgs.
Darwen Mechanics' Inst.	Mr. E. Neville, 6, Green- street East.	Holywell Green Mech. Inst. (near Halifax) ..	Mr. Benjamin Morton.
Dean Mills Even. Class, Halliwell, Bolton	Mr. W. Taylor, Dean Mills.	Huddersfield Mechanics' Institution	Mr. Joseph Bate, Mechanics' Inst., Huddersfield.
Denton and Haughton Mechanics' Inst., Den- ton, Manchester.....	Mr. John Collins, Hyde-road, Denton.		

Hull	Mr. P. Blackmore, 2, Charlotte-street.	Paisley	Rev. John Crouch, 8, George-street, Paisley.
Hulme Working Men's Institute	Mr. George A. Letch.	Parsonstown (Ireland)...	Mr. Edward Morrison.
Hunslet School of Art..	Mr. John C. Nicholson, Glasshouse-street.	Patricroft Mechanics' Institution	Mr. John Hewitt, Mechanics' Institution, Patricroft.
Hyde Mechanics' Inst., near Manchester	Mr. James Bradley.	Pembroke Dock	Mr. J. T. Cock, B.A., Merryrick-street.
Ipswich	Messrs. Edwin Barrett and Herbert Wright, Mech. Institution.	Penzance	Mr. Councillor Rodd.
Kendal	Mr. C. L. Braithwaite, jun.	Poole	Mr. John J. Norton, West-street, Poole.
Keswick	Mr. Henry Irwin Jenkinson.	Portsmouth	Mr. Alfred R. Robinson, 198, Lake-road, Landport.
Kidderminster Church of England Mutual Improvement Society ..	Rev. W. Packe.	Preston Institution	Mr. William Newsham, Avenham Institute, Preston.
Kidderminster Mech. Institute	Mr. H. Fawcett.	Ramsgate	Rev. F. L. Fisher, M.A., 9, Clarendon-gdns, Ramsgate.
King's Lynn	Mr. T. Burton, Chester-street, Lynn.	Rawtenstall Mechanics' Institution	Mr. William Wardleworth, Pleasant-view, Rawtenstall.
Kinver	Rev. W. H. Bolton, Kinver, near Stourbridge.	Redditch	Mr. V. Milward.
Lancashire and Cheshire Union of Institutes (Central Board).....	R. M. Pankhurst, LL.D., and Mr. Thomas Lawton, St. James's-chambers, South King-street, Manchester.	Richmond	Mr. F. G. Trevor, Richmond, S.W.
Lancashire Mech. Inst.	Mr. Thos. H. Dalzell, Mawdale-villa.	Rishton Mechanics' Inst. Blackburn.	Mr. James Hoyle.
Leeds Church Institute ..	Rev. F. J. Wood, M.A.	Rotherham	Mr. William Unwin.
Leeds Mechanics' Inst.	Mr. J. O. Dayson.	Rugby	Mr. F. E. Kitchener, M.A.
Leeds Young Men's Christian Association	Mr. W. Hind Smith, South-parade.	Salford Working Men's College	Mr. John Plant, Peel-park, Salford.
Lichfield	Rev. Thomas Dainty, M.A., the Close, Lichfield.	Scarborough	Messrs. J. H. Yewdall and J. R. Behenna.
Liverpool	Mr. Charles Sharpe.	Sheerness	Mr. J. Henry.
Lomeshaye (near Burnley) Evening School..	Mr. Leonard Clement.	Slough	Mr. W. H. Ward, Alpha-st., Slough.
London, Beauvoir College)	Mr. Robert Griffiths, Plaistow, E.	Smethwick	Mr. F. Talbot, Messrs. Chance's Schools.
„ Birkbeck Literary and Scientific Inst.	Mr. George M. Norris, 29, Southampton Buildings, Chancery-lane.	Southampton	Mr. W. Johnson, Caprera-cottage, Bevois-mount, Southampton.
„ City of London College	Mr. H. W. Hansen.	Southport Athenæum ...	Mr. B. Bennett.
„ Lambeth	Mr. T. E. Heller, Hercules-buildings, Lambeth.	South Staffordshire Educational Association ..	Mr. Fredk. Talbot, Messrs. Chance's Library, Smethwick.
„ Polytechnic Institution Classes	Mr. Jas. Cousins, Polytechnic Institution.	Staleybridge Mechanics' Institute	Mr. Joseph Wood, Foresters'-street.
„ St. Stephen's, Westminster	Mr. J. Cawood.	Stockport Mechanics' Institute	Mr. Mark Potts.
„ Stepney Deanery	Mr. T. Wild.	Stockport Sunday School Young Men's Mutual Improvement Society	Mr. Thomas Small, Baguley-street.
„ South London Working Men's College	Mr. Wm. Rossiter, 91, Blackfriars-road, S.E.	Stockton-on-Tees	Mr. T. H. Ainsworth.
Louth	Mr. B. Crow.	Stourbridge Associated Institutes	Rev. D. Maginnis.
Macclesfield Useful Knowledge Society ..	Mr. William Jeffery, Park-street.	Stourbridge Church of England Institute....	Rev. T. Williams.
Malvern	Dr. Marsden.	Stroud	Mr. S. Dickinson.
Manchester Mech. Inst.	Mr. E. L. Jones.	Swinton Mechanics' Inst. (near Manchester)....	Mr. Nicholas Kenyon.
Middlesborough	Mr. William Taylor,	Thirsk	Mr. Richard D. Carter.
Mossley Mechanics' Inst.	Mr. James Holt.	Tintwistle Mech. Inst.	Mr. John S. Lees, Tintwistle.
New Brompton (Kent), St. Mark's School-room	Mr. J. Bridger, Chatham Prison.	Tottington Mutual Improvement Society (nr. Bury)	Mr. Joseph Lord.
Newcastle-on-Tyne Church of Eng. Inst.	Mr. Jos. Forster, 69, Maple-terrace.	Tyldesley Mech. Inst.	Mr. William Lomax.
New Mills Working Men's Institute, near Stockport	Mr. Edward Godward.	Wakefield	Mr. J. Sugden, Thornhill-street, Wakefield.
New Swindon	Mr. J. Goudge.	Walsall	Mr. J. Webb, Free Grammar School.
Newton Heath (All Saints School)	Mr. Thomas Hudson, Springfield-view, Newton Heath.	Waterford	Mr. James Budd, 5, Kings'-street, Waterford.
Northampton	Mr. John B. Hensman.	Wednesbury	Rev. J. Winter, M.A., Rector of St. John's.
Oldbury	Rev. W. T. Taylor, Oldbury.	Wellingborough	Mr. T. S. Curtis.
Oldham Analytic Lit. Institution	Mr. Robert Hall	Werneth Mechanics' Institute, near Oldham..	Mr. Fred. H. Chadderton.
Oldham Lyceum	Mr. William Noton, Union-street, Oldham.	West Bromwich (1)	Rev. F. P. Hutton, Gold's-hill, West Bromwich.
Padiham	Mr. T. D. Harland.	West Bromwich (2)	Mr. Henry Ward, West Bromwich.

Weston-Super-Mare.....	Major-Gen. Gore Munbee.
Whaley-bridge Mech. Institute	Mr. A. H. Colles.
Willenhall	Mr. J. C. Tildesley, Willenhall.
Wolverhampton	Mr. J. N. Langley, M.A., LL.D., Wolverhampton.
Woolwich Arsenal	Mr. W. D. Keeble, Royal Laboratory, Royal Arsenal, Woolwich.
Woolwich (Rectory-pl. Science School	Mr. Wm. Fairbrother, Pinecottage, New-rd., Charlton, S.E.
Woolwich (St. Michael and All Angels Science Class)	Mr. Louis J. Ruegg.
Woolwich (St. Thomas's Parochial Schools)....	Mr. J. H. Norman.
Worcestershire Union of Institutes	Rev. G. D. Boyle and Mr. F. Marcus, Worcester.
Worcester Catholic Inst..	Mr. J. Tree.
Worcester Co-operative Reading-room	Mr. Smith.
Worcester, Bridport Free Church Mut. Improvement Association	Mr. E. J. Lewis.
York	Mr. Robert Hall, 8, Feasegate, York.

ELEMENTARY EXAMINATIONS.

The Society of Arts, ever since the establishment of its system of Examinations, has (while abstaining on its own part from examining students in elementary subjects) recommended the District Unions and Local Boards in connection with it to hold Examinations of this character as preparatory to the Final Examinations of the Society. In order to aid them in doing this, and at the same time to promote, as far as possible, a uniformity of standard all over the country, the following definite scheme of elementary examinations is recommended for the use of the District Unions and Local Boards. It is in two grades, and the candidates should be allowed to select either grade at their discretion.

LOWER GRADE.

1. Every candidate must be examined in the first four rules of Arithmetic, simple and compound.
2. Female candidates must also be examined in plain needlework.
3. Male candidates must also be examined in one at least of the three following subjects:—

- A. A general knowledge of the Gospel History.
- B. The rudiments of English History.
- C. The rudiments of the Geography of England.

4. Fairly good writing and spelling, with good reading of a simple narrative will also be required.

5. A satisfactory examination will entitle the candidate to a certificate (of the Lower Grade) from the District Union or Local Board.

HIGHER GRADE.

1. Every candidate must be examined in Arithmetic, including the Rule of Three, Decimal and Vulgar Fractions.
2. Every female candidate must also show proficiency in needlework.
3. Male candidates must also be examined in one at least of the four following subjects:—

- A. The facts of St. Matthew's Gospel and the Acts of the Apostles.
- B. A general knowledge of English History, and especially of the reign of George III.
- C. The Geography of Great Britain and Ireland.
- D. English Grammar.

4. Candidates will be expected to write fairly, spell correctly, and express themselves grammatically.

5. A satisfactory examination will entitle the candidate to a certificate (of the Higher Grade) from the District Union or Local Board.

No candidates under 12 years of age should be admitted to either grade of these examinations.

The Secretary of any District Union or Local Board in connection with the Society of Arts, desiring to adopt this scheme of Elementary Examinations, must apply to the Secretary of the Society of Arts before the 10th of February, stating the number of male and female candidates respectively desiring to be examined in each grade. Examination Papers* in the above subjects will then be forwarded to him, which of course must be kept secret from the candidates until the time of the Examinations.

These Examinations (where papers supplied by the Society of Arts are used) must, in 1870, be held on the 22nd, 23rd, and 24th March, after four o'clock, p.m., as follows:—

TUESDAY, 22nd March, After 4 p.m.	WEDNESDAY, 23rd March, After 4 p.m.	THURSDAY, 24th March, After 4 p.m.
Arithmetic.	English History. Geography.	Gospel History. English Grammar.

The District Unions and Local Boards will understand that, whether in the Elementary Examination the papers supplied by the Society of Arts, or entirely different papers are used, the Local Boards or their own Examiners must look through the candidates' answers and award the certificates. When this has been done, a return in the following form must be made to the Secretary of the Society of Arts, who, in those cases where the Society's elementary papers have been used, will forward the proper number of blank Forms of Certificate to be filled up by the Local Board:—

ELEMENTARY EXAMINATIONS, 1870.

Name of Board or }
District Union. }
No. of Centres _____

	HIGHER GRADE.		LOWER GRADE.	
	Examined.	Passed.	Examined.	Passed.
Males				
Females				
Total				

It is particularly requested that this form may be filled up and returned to the Secretary of the Society of Arts in every case, as it is important that the full number of Candidates examined in the Elementary Examinations should be accurately known and stated.

Any Candidate who has obtained a certificate of the Higher or Lower Grade in these Preparatory Examinations in Elementary Subjects may, at the discretion of

* The uniform Examination Papers afford a common standard of examination; and, to promote uniformity in the application of that standard, special copies of the Examination Papers, with the number of marks to be awarded for a complete answer to each question, will be printed for the use of the local examiners. Thus, suppose that in a paper there are twelve questions, and that the aggregate number of marks assigned to the paper is 120; the number of marks placed opposite to each of the questions will depend upon their relative difficulty, and the proportion of these marks given by the examiner for the answer of any candidate will depend upon its accuracy and completeness. Supposing a perfect answer to a question to be set down as worth 20 marks, an examiner may award 20, 17, 12, or any less number, according to the merit of the answer. Thus the candidates all over the country, though their papers be tested by different examiners, will be placed as nearly as possible upon an equal footing. No candidates should receive a certificate who does not obtain at least 30 marks in each paper, the whole paper being worth 120 marks. It is desirable that the same person should examine all the candidates in any one subject at any centre.

the Local Boards, if not less than sixteen years of age, be "passed" to the Final Examination of the Society of Arts in any of the special subjects in which his or her knowledge has also been properly tested.

The Council of the Society of Arts, while desiring

thus to aid local bodies in promoting elementary education, hope they will prevent the possibility of the elementary certificates awarded by themselves being confounded with the certificates awarded by the Society of Arts.

The foregoing Programme of Examinations is published in a separate form, and may be had *gratis* on application to the Secretary of the Society of Arts.

Fine Arts.

INDIAN ARCHITECTURE.—The Government of India has made arrangements for having a cast taken of the principal remaining gateway of the Sinchi Tope, near Bhilsa, with a view of having produced several copies of this work, the date of which is supposed to be about 250 B.C. It is the most elaborate work of sculpture existing in India.

Notes.

THE CHANNEL PASSAGE.—The Paris correspondent of the *Times* (August 21st) says:—"It was lately authoritatively stated by a Calais paper that the French and English governments had come to an understanding to execute great works in the ports of Calais and Boulogne, to deepen them, and enable them to receive ships of larger tonnage, and thus give greater facility to the international intercourse. Some details were given of the works contemplated at Calais. It seems improbable that the English government would share the labour or expense of works to be executed in a French port; but, without inquiring into this, it would be good news that some one was going to improve the port of Calais, so as to allow larger vessels than at present to enter at all times of tide."

Patents.

From Commissioners of Patents' Journal, August 27.

GRANTS OF PROVISIONAL PROTECTION.

Artificial stone, manufacturing—2448—F. Ransome.
Bearings and lubricating apparatus for revolving shafts—2371—A. C. F. Franklin.
Bedsteads, spring sackings for—2470—J. Lewis.
Boots and shoes, heels for—2337—W. T. Ramshill.
Boring braces—2359—D. Ridzie.
Candlesticks—2393—J. Cadick.
Carriage wheels—2332—E. H. de Bodmer.
Carriages—2434—S. Smith.
Casks, lining the interior of—2162—J. Jenkins.
Centrifugal pumps—2414—W. B. Newton.
Cops and spoles, manufacturing—2432—H. T. Yates.
Cotton, &c., cleaners used in machinery for preparing and spinning—2381—W. Guest.
Cotton, &c., presses for compressing—2472—J. Watson.
Drills for boring rocks—2355—W. R. Lake.
Earth screws—2466—A. Brown.
Easy chairs, &c.—2347—E. Cocking.
Felted fabrics—2377—J. H. Johnson.
Flax, &c., apparatus for spinning yarns of—2454—B. Hunt.
Furnaces—2450—T. J. Leigh.
Galvanoplastic stereotyping—2458—M. H. Jacobi.
Grain, pulverised, apparatus for distributing the different qualities into compartments—2375—J. Stanlar, S. Dawson, and E. Davies.
Hats—2349—J. and A. Garde.
Hides, &c., apparatus for dressing—2452—H. B. Barlow.
Hoop skirts—2407—J. Mayer.
Hydraulic printing or copying presses—2401—A. B. Brown.
India-rubber, utilising waste strips of—2379—A. Turner.
Iron—2454—J. H. Johnson.
Iron and steel—2381—G. F. Ansell.
Iron and steel—2391—T. S. Blair.
Iron and steel—2409—J. H. Johnson.
Land, irrigating and manuring—2363—I. Brown.
Leather, apparatus for striking-out—2389—S. Hutchinson.
Looking-glasses, attachment for balancing—2339—J. Taylor.
Looms, self-acting temples for—2341—J. Elce and R. Bond.
Looms—2428—T. Sagar and T. Richmond.
Looms—2468—E. T. Hughes.
Manure from the waste of wool, &c.—2420—C. E. Brooman.

Marseilles quilts—2365—J. Mitchell and T. Settle.
Metals and metallic alloys, fusion of—2397—H. Bessemer.
Paddle wheels—2315—L. W. Wright.
Passenger register, automatic—2446—H. H. Treno.
Petroleum, &c., refining—2291—A. Smith and D. Cunningham.
Ploughing and tilling apparatus—2443—G. W. Murray and G. M. Garrard.
Portfolios—2351—W. B. Rust.
Railway trains, communication in—2335—G. S. Hazlehurst.
Reaping and mowing machines—2422—T. Backwith.
Seed, &c., machine for sowing and covering—2487—W. R. Lake.
Seeds, &c., machinery for sowing—2464—J. Mackenzie.
Sewing needles, machine for making—2480—W. R. Lake.
Ships' bottoms, composition for coating—2353—T. Leach.
Size, boiling—2331—T. Livesey and T. Abbott.
Size, manufacturing—2403—C. and T. Crossley and R. Whipp.
Skips, hampers, &c.—2412—J. Parrish.
Soap—2104—J. Cross and J. McCann.
Soap—2424—J. Cowan.
Tobacco pipes—2405—G. White.
Tobacco pouches—2374—J. Quinton.
Tunnels—2410—J. F. E. Martin and L. G. le Guay.
Turret clocks, &c.—2474—H. W. Cook.
Velocipede—2165—C. H. ok.
Velocipedes—2426—J. Hampton and S. Partridge.
Vessels, apparatus for diminishing the effects of the oscillation of—2410—L. D. Newell.
Wheels, &c., apparatus for rolling metallic axles for—2388—T. Hancock.
Wood and stone, machinery for sawing—2198—G. Finneghan.
Worsted, &c., apparatus for spinning and doubling—2444—G. Sunderland and R. J. Midgley.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

Railways, &c.—2506—L. D. Girard.
Steel—2501—J. Baur.

PATENTS SEALED.

618. P. S. Regnaud.	763. J. Porteous and H. Gibson.
621. J. Rust.	799. C. D. Abel.
622. W. E. Gedge.	889. J. B. Fell.
629. A. H. Honerger.	1045. R. Norfolk.
631. C. E. Brooman.	1295. B. Dobson.
645. R. Law and S. Hargreaves.	1442. B. Latham.
650. H. A. Bonneville.	1844. R. McHardy.
658. A. M. Clark.	1939. C. Cochrane.
743. W. Wells.	1964. H. Yates.

From Commissioners of Patents' Journal, August 31.

PATENTS SEALED.

312. A. Barclay.	746. J. Waddington, jun., A. Waddington, & F. Bell.
619. J. Ladley.	755. J. M. Napier.
627. J. Cliff.	758. T. Beeley and D. Hanson.
633. W. Oiley.	760. W. Coxhead.
635. F. N. Gisborne and H. Allman.	857. H. E. Newton.
643. J. Sloper.	884. J. H. Johnson.
644. H. W. Goldring.	943. S. Firth.
646. F. Andoe.	962. A. Chambers.
647. J. Robertson and J. Shanks.	1022. J. Woods, J. Hampson, and L. and G. Fish.
659. S. Marsden.	1105. O. Vivier.
661. J. B. Spence.	1144. W. E. Newton.
665. W. Betts.	1365. R. Wapenstein.
678. W. S. Meldrum.	1795. J. Foster and J. Hoillibrake.
680. A. Morrall.	1884. H. A. Bonneville.
698. H. W. Cook.	2013. T. Grahame.
714. H. Mason, G. Hartley, and J. Hindle.	2028. G. Buchanan.
717. B. Hunt.	2068. M. A. Muir & J. Mollwham.
719. A. M. Clark.	2070. G. A. Nowell.
747. W. Betts.	

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

2188. G. Little.	2204. H. A. Dufrené.
2195. J. F. M. Pollock.	2313. J. Silvester.
2199. C. T. Porter.	2313. J. Foster, jun.
2222. W. T. Eley.	2326. J. Richards.
2499. A. F. Johnson and M. P. Griffin.	2328. T. Gall.
	2242. W. E. Newton.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

2441. R. A. Brooman.	2401. W. Owen.
2374. R. Sims.	2951. J. G. Marshall.